Too intelligent, or too artificial, or both?

ANDY CLARK

A s a longtime reader of American comic books, I have always been adverse to those WHAT IF? treatments in which well-worn characters are depicted in alternative realities, in strange groupings, and sometimes with morphed views and personalities to boot. In this engaging but similarly disturbing counterfactual conceit, John Casti pits philosopher Ludwig Wittgenstein against computer scientist Alan Turing on the question “Can a machine think?”

The literary device is to imagine a lively but urbane dinner party held one stormy night in Cambridge, in postwar England, in 1949. The novelist and science advisor C.P. Snow has, at the behest of His Majesty's Government, invited a stellar list of guests to a sumptuous (by postwar standards) meal, whose intended by-product is the discovery of whether machines have the potential to exhibit intelligent behavior.

The spurt, we soon learn, is the work of Turing and his group in Manchester, work rooted in wartime cryptography and now continuing as an investigation into general-purpose automated problem-solving and the theory of computation. The direct (perhaps too direct) counterpoint to Turing's optimistic vision of genuinely intelligent machines emerges, in Casti's treatment, as Wittgenstein. Or rather, the enemy of that idea emerges as an unholy cross between Wittgenstein and more contemporary dissenters such as the philosopher John Searle.

Casti's crucial move makes the book lively, intriguing, and at the same time somewhat distressing. He allows his historical characters to invent and discuss numerous views and positions that were actually developed in subsequent decades. Thus Wittgenstein is allowed to invent and defend Searle's Chinese Room argument against the sufficiency of syntactic-senseful thinking. He also develops his famous test, in which a program is run on a machine.

The eponymous quintet is completed by the addition of physicist Erwin Schrödinger and J.B.S. Haldane, geneticist and popular science writer. Although not as intellectually central to Casti's treatment as Turing and Wittgenstein, these characters are well-rendered and make distinctive contributions to the proceedings.

Haldane, for instance, plays a kind of academic Everyman, dividing his attention equally between the argument and the convivial succession of sherry, soup, fish, beef, salad, flummery (a Scottish dessert based on fruit, oatmeal, and whisky), brandy, and cigars—a succession that Casti also employs to divide the chapters and introduce breaks and new topics as required. In the gastronomic lulls, Haldane interjects rough but reasonable summaries of the points and arguments, as well as something of his own views concerning the crucial role of sensory-motor-environmental interactions in endowing inner syntactic states with genuine content or meaning.

The central exchange, however, is between Turing and Wittgenstein. Turing introduces the idea that cognition might depend purely on the computational organization of the brain, and not on the specific wet stuff of which it is built. He also develops his famous test, in which success in fooling a verbal interlocutor for the duration of a topic-unbounded conversa-
with my opening sentiments), that I found the depiction of Wittgenstein rather unsettling. He is shown as vehemently opposed to the very idea that a machine could display real thought and intelligence. Now to be sure, the real Wittgenstein would pooh-pooh the project of attempting to explain thought by the scientific investigation of inner workings, computational or otherwise. But I am not at all convinced that he would deny that a machine might one day exhibit genuine intelligence, nor that he would ally himself with the Searle-style argument that—in real life at least—attempts to show that the causal powers of the implementing substance actually matter. In fact, I would bet my boots he would not, for such arguments simply invite an inner focus of a different kind, rather than rejecting such a focus at the outset.

To be fair, Casti issues numerous warnings and peppers the opening pages with disclaimers. The conversation, he stresses, is wholly imaginary and temporarily foot-loose. And in any case, people say all kinds of things over beef and brandy that they would never dare to commit to print. Casti also provides a useful closing chapter that corrects the time-lines and points to further readings. Yet for all that, I found Casti’s Wittgenstein such an unfamiliar creature that I was at times distracted from the flow and undoubted craft of the fiction itself.

I could be wrong. Had Wittgenstein attended such a dinner, perhaps he would have issued vehement outbursts against the very idea of a thinking machine, and would have roundly endorsed the Hieroglyphic (Chinese) Room counterattack. In any case, it can hardly matter since this is avowedly a work of ‘scientific fiction.’ Moreover, it is a very fine one, covering valuable intellectual ground while maintaining a sense of plot, history, character, and atmosphere. In sum, it is a first-class intellectual roller-coaster ride—but not for the counterfactually squeamish.

Andy Clark is professor of philosophy and director of the Philosophy/Neuroscience/Psychology Program at Washington University in St. Louis.

**Kenneth Foster**

Doctors do it, and teachers do it. But few engineers write well about the human aspects of their craft. *Close to the Machine*, by software engineer Ellen Ullman, is a wonderful exception. As her book makes clear, Ullman would be an interesting per-